Rehabilitation Research
Design & Disability
University of Wisconsin–Milwaukee

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Universal Access Projects-
Community Design Solutions (CDS)

Annual Report
January 2007-May 2008

Community Design Solutions (CDS) aims to improve the quality of life in Wisconsin by designing or changing environments toward increased accessibility and refining decision making processes effecting the environment. CDS is involved in numerous projects including working with UWM's R_2D_2 Center on the Milwaukee Idea Home, the ACCESS-ed Project, Design and Disability Instruction, and the Senior Home Assessment and Repair Project.

CDS Website: www.uwm.edu/MilwaukeeIdea/CDS/

I. Executive Summary

The Universal Design Team, based in UWM's R_2D_2 Center and a component of CDS, had another full year with many highlights:

- Twenty-three home assessments conducted for the Senior Home Assessment and Repair Program (SHARP).
- The launch of a new ACCESS-ed website. (http://access-ed.r2d2.uwm.edu/)
- Three presentations on accessibility measurement and universal design at the International Association of Higher Education and Disability (AHEAD) Conference, one of which was a full day Capacity Building Institute (by invitation).

- Presentation on the SHARP project at the International Conferences on Aging, Disability and Independence (ICADI) on February 22nd, 2008.
- Development of protocols and procedures for SHARP project.
- A Universal Design in Education (UDE) workshop at the WI AHEAD regional conference.
- Several training sessions connected with the development of five partnerships within the UW System and with the State of Wisconsin Pathways to Independence group,
- Two completed research theses.
- Instruction of a highly inter-disciplinary Design and Disability course.
- The development and use of ten Accessibility and Universal Design Information Tool (AUDITS) to evaluate the accessibility of classroom instruction, Power Point presentations, web kiosks, elevators, and other campus features.

This year's activities continued to follow the theme of incorporating universal design (UD) into physical, instructional, and informational environments to promote cutting edge campuses and communities that shift from accommodating and adapting for individuals to infusing universal design and accessibility from the beginning. Overall, the past year's activities have generated increased interest in the topics of universal design and accessibility in the community. We look forward to the upcoming year of activity.

II. The Universal Access Team

Roger O. Smith, Ph.D.
Professor, Occupational Therapy
Director, Rehabilitation Research Design & Disability (R_2D_2) Center

Staff Contributing to CDS Related Projects:
- Aura Hirschman, MS, CRC
- Denis Anson, MS, OT
- Kathy Longnecker Rust, MS, OT
- Randy Will, BS, engineering
- Tereza Snyder, BFA, programming
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Graduate and undergraduate students:

- Jungeun Kim
- Keith Edyburn
- Kristiana Maggard
- Margaret Kastner
- Carleen Paprocki
- Crystal Ammann
- Kristi Vandenbush
- Rochelle Mendonca

III. 2007-2008 Project Achievements

- **ACCESS-ed Project** 

ACCESS-ed (Accessible Campus Climate Environment Support Systems for Education) is a project designed to develop and test processes that deliver low-cost universal design of instructional, information media, and physical environments to higher education campuses nation-wide. The project is supported in part by the U.S. Department of Education's Office of Post-secondary Education and maintains a collaborative partnership with CDS. Over this past year, several ACCESS-ed workshops, presentations, and conferences have been conducted on topics such as measurement of accessibility on post-secondary campuses, how to infuse Universal Design knowledge and use, in post-secondary education (UDE), and replication of the Departmental Accessibility Resource Coordinators (DARC) system. In addition to providing information and workshops, ACCESS-ed has developed numerous resource tools, strategies, and products for universal design in post-secondary education. (Refer to Appendix B for a sample audit). The audits created as a part of this project are also available on the newly launched ACCESS-ed website listed below. Further information on the website is discussed later. In addition, there has been continued research on the impact of universal design strategies in post-secondary education. The ACCESS-ed team successfully submitted a second tier three-year grant proposal to Department of Education on May 22, 2008 called "Universal Design Infusion of Technology and Evaluation for Accessible Campuses of Higher Education (UD ITEACH)". This has been funded and will begin in the spring of 2009.

ACCESS-ed Website: http://access-ed.r2d2.uwm.edu/

- **Design and Disability Instruction:** The Design and Disability (OCCTHPY 625) course brings together current and future professionals from different backgrounds and disciplines to teach the concepts and application of universal design. This course was taught as an elective in the fall of 2007 to students in the occupational therapy and architectural graduate programs among others. The course also worked towards establishing the Assistive Technology and Accessible Design Certificate during the fall of 2006 which has been approved and is in progress. With this course being a requirement for the certificate and with its greater advertisement, more students have enrolled to take it as an elective. The course offers a new way of thinking creatively to apply the techniques of universal design in various settings and professions. Support and collaboration for interdisciplinary students as well as involvement in student research has been provided throughout the past year of both SARUP and CHS graduate students. Thesis instruction was provided for three students within the R_2D_2 Center (Refer to Appendix A for Bibliography). In addition, Dr. Roger O. Smith supported the Ph. D. work of SARUP student Emi Kiyota.

- **Milwaukee Idea Home:** The MIH is a project of CDS that was designed and built for accessibility which is currently being used by Independence*First* as a transitional housing facility. *Over* the past year, students involved with this specific project were sent to an instructional laboratory where they were taught about the development of housing using universal design and were shown various universal design features.

  MIH Website: www.uwm.edu/MilwaukeeIdea/CDS/

- **Senior Home Assessment and Repair Program**

  Senior Home Assessment and Repair Program

  SHARP is a community-based project in which occupational therapy students from UWM collaborate with Layton Boulevard West Neighbors (LBWN) and Rebuilding Together Greater Milwaukee (RTGM) to provide home assessments, recommend environmental modifications, and implement repairs for senior homeowners living in

the Layton Boulevard community. We supported and provided supervision for students who conducted a total of twenty-three home assessments from January of 2007 to May 2008. Remodeling and implementation of home modifications have been made to numerous homes and are underway for the remaining. The home evaluations for LBWN were not included with the UWM occupational therapy curriculum during the past 2007-2008 school year, but students of the program were the primary assessors. The home assessment document used for the evaluations was modified (Refer to Appendix C for assessment tool). In addition, this year we started to incorporate members from the CDS team of architects within the project to provide an additional background as well as began creating a follow-up evaluation to determine homeowner satisfaction of the modifications implemented. Ph.D. student, Rochelle Mendonca, from the R_2D_2 Center presented on the SHARP project at the International Conferences on Aging, Disability and Independence (ICADI) in St. Petersburg, Florida on February 22nd, 2008. Lastly, a PantherFile account was created for the team to be able to access all documents of the project through the web-based server. The collaborative team, including UWM, LBWN, RTGM, and CDS recently received funding from the Faye McBeath Foundation and the Retirement Research Fund as well as an additional grant from US Cellular.

SHARP Website: http://www.r2d2.uwm.edu/cds/shrp.html

- **UWM Campus Implementation of Physical Facility Design**

Elevator Audits: With the input of numerous colleagues, an elevator audit has been created to assess the design, usability, and accessibility of elevators across campus. The audit has been used by professionals and students to evaluate various elevators throughout the university and has been submitted to the active campus elevator design and upgrade implementation team.

Web Kiosks: Work has continued over the past year with the web kiosk team (SunRay) to establish universal design guidelines for purchasing, installing, and using the web kiosks throughout campus. Dr. Roger O. Smith, along with students

from the R_2D_2 Center and architecture, have been actively involved in brainstorming ways to improve the accessibility and design of the web kiosks. The team has looked at both physical aspects of the web kiosk stations as well as internal aspects of the computer on the kiosk.

- **Websites:** R_2D_2 Center staff members collaborated to provide technical assistance and support for the creation, edits, and launching of various R_2D_2 websites. Along with numerous website updates and edits, the ACCESS-ed website was created and is in the piloting phase to test for errors and final changes. The site includes general ACCESS-ed information, a virtual campus that includes multiple facilities around campus, a tip of the day related to education and universal design, information for Departmental Accessibility Resource Coordinators (DARCs), and resources including but not limited to checklists, audits, tip sheets, and protocols.

IV. 2008-2009 Planned Activities

Community Design Solutions allows us to continue working in a range of ways in the area of universal design and accessibility. As always, a set of new and continuing activities, including both community-based, and campus-based projects are anticipated for the current and coming year. Although we know the long list of activities that are desired can not all be accomplished in a short time, it is our hopes to continue with our current projects and expand our support for future projects. Planned activities include:

1. **ACCESS-ed**
    - ACCESS-ed 2008 Conference from September 25th, 2008 to September 26th, 2008 which will highlight ACCESS-ed accomplishments and focus on universal design in post-secondary education applications.
    - Accessible products and resources as example for other websites, developers, etc.
    - Three year grant and research titled “Demonstration Projects to Ensure that Students with Disabilities Receive a Quality Higher Education” beginning in January of 2009.
2. **Milwaukee Idea Home**
    - Continuation of home tours as part of instructional courses.

3. **Instruction**
    - Fall 2008 Design and Disability course to graduate students across schools and colleges (CEAS, CHS, and SARUP).
    - Ongoing interdisciplinary support and collaboration to graduate students across colleges related to universal design.

4. **Senior Home Assessment and Repair Program (SHARP)**
    - Completion of 10 home assessments by end of year.
    - Additional grants from the Faye McBeath Foundation and the Retirement Research Fund.
    - Recruitment and training of new occupational therapy students as home assessors.
    - A thesis in the area of functional outcomes of home modifications to be conducted by occupational therapy graduate student, Crystal Ammann.
    - Incorporating the knowledge and skill of the architectural students from CDS.
    - Testing of a new integrated recommendation tracking spreadsheet.

5. **UWM Campus Implementation of Physical Facility Design**
    - Coordination with physical plant about elevator audits.
    - Coordination on web kiosk implementation.
    - Support to the UWM library for remodeling.
    - Development and follow-up on bulletin board and white board purchase and installation guidelines.

6. **Website Design**
    - Updating and editing of the websites within the R_2D_2 Center website.
    - Improving the accessibility of the ACCESS-ed website with the virtual campus as an example to the public.

V. **Bibliography and Project Work Samples**
    - Appendix A: Bibliography
    - Appendix B: Anson, D., Kim, J., Seitz, J., Siegler, S., & Smith, R. O. (2007). P3 Audit.
    - Appendix C: Mendonca, R., Paprocki, C., & Siegler, S. (2007). Home Safety and Accessibility Assessment: The Senior Home Assessment and Repair Project.
    - Appendix D: Sample photographs of SHARP team and SHARP pre and post modifications
    - Appendix E: Equivalent Text Descriptions for images in Appendix D

Appendix A

Bibliography

Presentations 2008

Hirschman, A.M. & O'Connor, T. (2008, May 2) *Universal Design and the Role of the Disability Student Service Provider*. Presentation at the WI AHEAD Conference, University of Wisconsin- Whitewater, WI.

Hirschman, A.M. & Smith, R.O. (2008, March 3) *Universal Design and ACCESS-ed*. Presentation at the University of Wisconsin- LaCrosse, WI.

Hirschman, A.M. & Smith, R.O. (2008, January 22) *Universal Design and ACCESS-ed*. Presentation at the University of Wisconsin Colleges, Waukesha, WI.

Hirschman, A.M. & Smith, R.O. (2008, January 16) *ACCESS-ed and Universal Design*. Presentation at the University of Wisconsin-Platteville, Platteville, WI.

Hirschman, A.M., Lo Guidice, T., & McCallister, R. (2008, January 9) *ACCESS-ed - A Jump Start to Universal Design in Education.* Presentation at Madison Area Technical College, Madison, WI.

Maggard, K. R. & Smith, R. O. (2008, February 22). *Measuring the quality of text equivalents to multimedia information.* Presentation at the International Conference on Aging, Disability and Independence, St. Petersburg, FL.

Mendonca, R. J., Jansen, C. F., Smith, R. O., John-Gomez, C., & Katz-Petted, L. (2008, February 22). *Inter-disciplinary based evaluation and intervention for a senior home repair project.* Presentation at the International Conference on Aging, Disability and Independence, St. Petersburg, FL.

Smith, R. O., Pickens, N. D., Rust, K. L., Siegler, S., & Mendonca, R. (2008, April 13). *Evidence based measurement of accessibility for occupational therapy practice: Tools and techniques.* Institute presented at the American Occupational Therapy Association, Long Beach, California.

Smith, R.O. & Hirschman, A.M. (2008, March 4) *Universal Design and ACCESS-ed*. Presentation to the Provosts Cabinet at the University of Wisconsin- Platteville, WI.

Smith, R.O., Hirschman, A.M. & O'Connor, T. (2008, April 24) *Universal Design Applications*. Presentation at the University of Wisconsin- LaCrosse, WI.

Presentations 2007

Hirschman, A., Schwanke, T. D., & Smith, R. O. (2007, July 20). *Assessment of the campus climate for all students with disabilities – Measurement tools.* Poster presented at the annual international AHEAD Conference, Charlotte, NC.

Hirschman, A. M. (2007, July 20). *ACCESS-ed and Disability Accessibility Resource Coordinators (DARC): Infusing universal design on campus.* Symposia presentation, 2.10, at the AHEAD Conference, Charlotte, NC.

Hirschman, A. M., Sander, E., Smith, R. O., & Schroeder, C. (2007, June 20). *A DARC campus road trip: Accessibility bloopers tour.* Presentation at the DARC (Departmental Accessibility Resource Coordinators) Workshop, University of Wisconsin-Milwaukee, Milwaukee, WI.

Hirschman, A. M. & Smith, R. O. (2007, May 24). *Universal design of campuses: Benefit or burden?* Presentation at the 2007 University of Wisconsin Colleges Colloquium: Intersections of Academic and Personal Worlds, University of Wisconsin–Marshfield/Wood County, Marshfield, WI.

Hirschman, A. M., Sander, E., & Smith, R. O. (2007, April 18). *Universal design in the learning environment.* Presentation at the DARC (Departmental Accessibility Resource Coordinators) Workshop, University of Wisconsin-Milwaukee, Milwaukee, WI.

Hirschman, A. M., Edyburn, D., Sander, E., & Schroeder, C. (2007, February 21). *Are you ready for universal design?* Presentation at the DARC (Departmental Accessibility Resource Coordinators) Workshop, University of Wisconsin-Milwaukee, Milwaukee, WI.

Hirschman, A. M., Sander, E., Schroeder, C., & Smith, R. O. (2007, March 29). *Challenges and strategies for universally designed presentations.* Presentation at the DARC (Departmental Accessibility Resource Coordinators) Workshop, University of Wisconsin-Milwaukee, Milwaukee, WI.

Mendonca, R., Siegler, S., Kastner, M., Hirschman, A., Maggard, K. R., Kim, J., & Smith, R. O. (2007, October 27). *Evidence based measurement of accessibility for occupational therapy practice: Tools and techniques*. Workshop presented at the Annual Wisconsin Occupational Therapy Association Conference, Waukesha, WI.

O'Connor, T. (2007, September) *Testing Accommodations and Universal Design.* Presentation at assistive technology and transition workshop, Wausau, WI.

O'Connor, T. (2007, October) *Testing Accommodations and Universal Design.* Presentation at assistive technology and transition workshop, Madison, WI.

O'Connor, T. (2007, November) *Testing Accommodations and Universal Design.* Presentation at assistive technology and transition workshop, Milwaukee, WI.

O'Connor, T. (2007, November) *Using Universal Design in Testing.* Presentation to instructional faculty and staff at the University of Wisconsin-Whitewater, Whitewater, WI.

Siegler, S. & Smith, R. O. (2007, June 16). *Instructor knowledge of universal design*. Poster presented at the RESNA 30th International Conference on Technology and Disability: Research, Design, Practice and Policy, Phoenix, AZ.

Smith, R. O., Schwanke, T. D., Hirschman, A. M., & Rust, K. L. (2007). *Access audit protocols & templates for OT professional training to improve universal design education.* Poster Presented at the 87th Annual American Occupational Therapy Association Conference, St. Louis, MO.

Smith, R. O. (2007, April 11). *Structural barriers and universal design in cultural diversity*. Guest lecturer at University of Wisconsin-Milwaukee, Milwaukee, WI.

Smith, R. O. (2007, April 2). *Universal design lecture and lab*. Guest lecturer in Enhancing Health Through Activity, Occupation and Technology II, University of Wisconsin-Milwaukee, Milwaukee, WI.

Smith, R. O. (2007, February 22). *SARUP 302 Architecture and Human Behavior: Topic universal design and disability*. Presented at the University of Wisconsin-Milwaukee, Milwaukee, WI.

Smith, R. O. & Hirschman, A. M. (2007, January 15). *The ACCESS-ed grant.* Presentation at the spring meeting, University of Wisconsin System Presidents Advisory Committee on Disability Issues, University of Wisconsin, Madison, WI.

Products 2007-2008

Hirschman, A. M. & Smith, R. O. (2007). Top 12 tips for universal design in the classroom. Posterette tip sheet created for distribution to various campus departments, University of Wisconsin-Milwaukee, Wisconsin, Milwaukee.

Thesis/Dissertation Research Projects 2007-2008

Kim , J. (Anticipated 2008) Campus accessibility. In preparation master's thesis, University of Wisconsin-Milwaukee.

Kastner, M. (Anticipated 2008). ACCESS-ed taxonomy. In preparation master's thesis, University of Wisconsin-Milwaukee.

Maggard, K. (2008). Determining the efficacy of a text description protocol. In preparation master's thesis, University of Wisconsin-Milwaukee.

Siegler, S. (2007). Measuring universal design knowledge and skills of post-secondary faculty. Unpublished master's thesis, University of Wisconsin-Milwaukee.

Appendix B

P3 Audit Example

AUDIT Target:
AUDIT Date:
Auditor:

P3 AUDIT

Accessibility and Universal Design Information Tool (Version 1.1)

Part 1: Accessibility

Part 1 contains questions that are most critical in evaluating the accessibility of a syllabus. At minimum these questions should be completed in order to identify any serious problems that limit accessibility for persons with a disability.

Answer the following questions by marking an X in the appropriate box.

	Scale: **Y** = The feature is present **and** effective in the item being audited. **Partial** (P) = The features is present in some, but not all cases, or is only partially effective in meeting the accessibility goal. **N** = The feature is not present, or cannot be easily discovered in the item being audited. If you are not sure if the feature is present, mark "No." **NA** = The feature is neither present nor required for accessibility in the item being audited.	Yes	Partial	No	NA
	Accessibility Section 1 - Speaker's Location and Appearance	Y	P	N	NA
1	The speaker selects presentation position with clear line of sight to seating adequate for the expected audience.				
2	The speaker faces the audience when speaking (e.g. Avoids facing slides, screens or charts during extended explanations).				
3	The speaker gestures and grooming do not interfere with view of face for listeners (e. g. mustache does not extend beyond upper lip, hair worn back from face, speaker does not cover mouth with hands when speaking).				
	Accessibility Section 2 - Speaker-Audience Interaction	Y	P	N	NA
1	In setting where audience questions are not clearly audible to all audience members, the speaker repeats or paraphrases the questions.				

2	The speaker adapts content level and rate of presentation in response to audience interaction (verbal and non-verbal).				
	Accessibility Section 3 - Speaker Delivery	Y	P	N	NA
1	The speaker uses voice that carries over listening area adequate for audience size, including using a microphone if necessary.				
2	The speaker delivers content at a rate that is appropriate for the majority of the class.				
	Accessibility Section 3 - Speaker Delivery (cont.)	Y	P	N	NA
3	The speaker uses vocabulary and expressions that are appropriate to the audience (e.g. considering audience knowledge level, educational/cultural background).				
4	Numbers, formulae, or unfamiliar terms are introduced or explained with more than one medium (e.g. written and spoken).				
5	The speaker explains the acronyms the first time they are used (except when they were explained in previous presentations).				
	Accessibility Section 4 - Presentation Content and Organization	Y	P	N	NA
1	The amount and intensity of information is well balanced (e.g. major topics not being pushed into the early or late content).				
2	The presentation content meets the expected level of knowledge of members of the audience.				
3	There are rest breaks at intervals during prolonged (longer than two hours) presentations.				
4	Whenever there are breaks, the breaks fall at the end of major topics or after periods of sustained concentration.				
	Accessibility Section 5 – Audio-visual Information and Equipment (When the speaker does not use any of the following audiovisual information, mark "NA".)	Y	P	N	NA
1	Sound volume and clarity of instructional media allows comprehension over the audience seating area.				
2	When requested within posted guidelines, assisted listening systems (FM amplification, loop, or other requested technology) is provided to audience members.				
3	Projected information has size, focus, contrast, and information density to facilitate interpretation from seating adequate for expected audience.				
4	Support materials such as hand-outs are available (and availability announced) to audience prior to the beginning of a session				

Appendix C

SHARP Home Assessment Evaluation Tool

Rehabilitation Research
Design & Disability

University of Wisconsin–Milwaukee

Home Safety and Accessibility Assessment: The Senior Home Repair Project

Created by the R2D2 Center at UW-Milwaukee
(First Version by Rochelle Mendonca, Carleen Paprocki and Stephanie Siegler
Updated by Crystal Ammann and Kristi Vandenbush)

Based on the assessment created by Linda Balfanz at Rebuilding Together Greater Milwaukee

Introduction

1. Introduce yourself and other assessors present

2. Ask the homeowners if they understand why you are there and what you are going to do.

3. Explain the following:
   - Here to make recommendations that will make their day to day lives easier
   - Reduce obstacles in their home to make their home as safe as possible
   - Goal is to keep them safe in their own home for as long as possible (may want to ask how long they have lived in their home for perspective)

5. Explain the following:
   - To maximally help you, we need you to be open and honest with us.
   - Don't worry; everything will be kept confidential within the Layton Boulevard West Neighbors Project

7. "After a short interview, we will ask you to show us around your home and in each room we will make observations and ask you specific questions."

8. Is there anything you want to ask us before we begin?

General Information:

Homeowner(s) Name(s): _____
Homeowner(s) age(s): _____
Date of Home Assessment: _____
Homeowner Address: _____
Homeowner Phone: _____

Occupational Therapist (Primary Assessor): _____
Other Attendees: _____
Assessor Phone: _____

Health Inventory:

1. Homeowner known disabilities, impairments or health conditions:

☐ Diabetes ☐ Arthritis ☐ Surgeries (specify) _____ ☐ Fractures
☐ Vision Impairments (specify) _____ ☐ Cardiovascular Disease
☐ Hearing Impairment (one or both ears/how severe) _____
☐ Injuries (specify when it happened and where) _____
☐ Other: (please specify) _____

2. Joint pain (note location)?

☐ Shoulder L/R ☐ Elbow L/R ☐ Wrist L/R ☐ Hands L/R
☐ Back ☐ Neck Upper/Lower ☐ Hip L/R ☐ Knee L/R
☐ Ankle L/R ☐ Foot L/R

Prompt for assessor: For example, do you ever have difficulty turning on and off faucets or opening door handles?

3. Do you ever experience muscle pain and where (note location)?

☐ Arm Upper L/R ☐ Arm Lower L/R ☐ Leg Upper L/R ☐ Leg Lower L/R
☐ Hand L/R ☐ Back ☐ Other: _____

Prompt for assessor: For example, do you ever feel tired or in pain after carrying a load of laundry up/down the stairs or after making a meal for yourself?

4. Do you use any type of ambulatory device/equipment? ☐ Yes ☐ No

If so, what type of device(s): ☐ Wheelchair ☐ Walker ☐ Cane
☐ Other: (please specify) _____

Where do you use this ambulatory device? ☐ Outside ☐ Inside

☐ Everywhere ☐ Other: (specify what type) _____ When or how often do you use this ambulatory device? ☐ Always ☐ Never ☐ Sometimes
☐ Other: (specify what type) _____

5. Do use any type of auditory device or hearing aide? ☐Yes ☐ No
If so, what type of device: ☐ Hearing Aide (one ear L/R) ☐ Hearing Aide (both ears)
☐ Other: (specify what type) _____

When do you wear/use them and/or how often do you use them?

☐ Always ☐ During Day ☐ Only at Home ☐ Only Outside (of home)

☐Other (specify): _____

6. Do you use any type of visual aide/corrective device? ☐Yes ☐ No

If so, what type? ☐ Bifocals ☐ Single lens ☐ Trifocals

☐ Contacts ☐ Other: (specify type) _____

How long have you worn/used them? _____

When do you wear/use the visual aids and/or how often do you use them?

☐ Always (when awake) ☐ During Day ☐ When reading ☐ When Driving

☐ Other: (please specify) _____

Prompt for assessor: For example, do you have problems walking up and down stairs?

7. Do you have/use any other types of assistive equipment such as:

☐ Tub Chair	☐ Hand Held Shower	☐ Raised Toilet Seat
☐ Tub Bench	☐ Grab Bars_____	☐ Bedside Commode
☐ Reacher	☐ Long Handle Sponge	☐ Long Handle Shoehorn
☐ Sock aide	☐ Other_____	

Are there any other areas that you think an assistive device would help you? _____

8. How do you spend your time?
_____

Prompt for assessor: For example, are you currently working full or part-time? What type of activities do you take part in during your free time such as volunteering or caring for others?

9. Do you (the homeowners) have any other questions???

Outside The House

Observations:

1. Type of residence: ☐ one-story ☐ two-story ☐ other: (please specify) _____

2. Steps at front entrance: ☐Yes ☐ No
   Steps at back entrance: ☐Yes ☐ No
   Steps at side/other entrance: ☐Yes ☐ No

3. Number of handrails: front____ back____ side___
   Type/Location of handrails: ☐ Single (one side) ☐ Double (both sides)
   Secure: ☐Yes ☐ No
   Good Condition: ☐Yes ☐ No
   Measure height of handrails: _____

4. Number of steps: front____ back____ side____ step height: _____
   Are the steps and walkway in good condition: ☐Yes ☐ No
   Number of steps: front____ back____ side____ step height: _____
   Are the steps and walkway in good condition: ☐Yes ☐ No

5. Is there an Outside Light at front entrance? ☐Yes ☐ No
   Working: ☐Yes ☐ No Adequate: ☐Yes ☐ No Describe: _____

   Is there an Outside Light at back entrance? ☐Yes ☐ No
   Working: ☐Yes ☐ No Adequate: ☐Yes ☐ No Describe: _____

   Is there an Outside Light at other/side entrance? ☐Yes ☐ No ☐ NA
   Working: ☐Yes ☐ No Adequate: ☐Yes ☐ No Describe: _____

6. Measure hallway width (from kickboard to kickboard): _____

7. Measure Doorway width: front____ back____ side_____
   Is the door way wheelchair accessible? ☐Yes ☐ No
   If no, describe why? _____

8. Is there a clear walkway (path) to enter house from the front: ☐Yes ☐ No
   Is there a clear walkway (path) to enter house from the back: ☐Yes ☐ No

Is there a clear walkway (path) to enter house from the side: ☐Yes ☐ No ☐ NA

9. Is there a threshold at front entrance: ☐Yes ☐ No Height: _____
   Is there a threshold at back entrance: ☐Yes ☐ No Height: _____
   Is there a threshold at side entrance: ☐Yes ☐ No Height: _____

10. Type of door handles: ☐ Lever ☐ Round ☐ Thumb-push
    ☐ Other (specify) _____

11. Number of locks at front entrance:____
    Location of locks at front entrance: _____
    Type of locks (front entrance): ☐ Single Cylinder ☐ Double Cylinder
    ☐ Other (specify) _____

12. Number of locks at back entrance: ____
    Location of locks at back entrance: _____
    Type of locks (back entrance): ☐ Single Cylinder ☐ Double Cylinder
    ☐ Other (specify) _____

13. Number of locks at other entrance: ____
    Location of locks at other entrance: _____
    Type of locks (other entrance): ☐ Single Cylinder ☐ Double Cylinder
    ☐ Other (specify) _____

14. Location of mailbox: _____
    Ask the homeowner(s) if they are able to get their mail safely? ☐Yes ☐ No

Specific Questions:

Prompt for assessor: "Let's talk about your front (back or side) door."

1. Is it easy for you to walk/enter into the house through the front entrance? ☐Yes ☐ No
   Describe: _____

2. Is it easy for you to walk/enter into the house through the front entrance? ☐Yes ☐ No
   Describe: _____

3. Is it easy for you to walk/enter into the house through the front entrance? ☐Yes ☐ No
   Describe: _____

4. Do you have a porch light? ☐Yes ☐ No Is the light working? ☐Yes ☐ No

5. Do you ever have difficulty identifying visitors? ☐Yes ☐ No

Describe (when, where, why): _____

Is there a door peephole viewer: ☐Yes ☐ No Height of peephole: _____

6. Can you always hear the doorbell or knocks on the door? ☐Yes ☐ No

   If not, are there specific areas in your home where you cannot hear the doorbell or knocks? Describe: _____

   Is the doorbell in working order? If not, please circle appropriate response.

   (Doorbell not working/ doorbell not loud enough/ insufficient speakers/
   Other: (be specific) _____)

7. Do you ever have difficulty opening and closing your windows? ☐Yes ☐ No
   Do your windows lock? ☐Yes ☐ No Describe how/type of locks: _____

8. Do you ever have difficulty managing the door locks and knobs/handles? ☐Yes ☐ No
   Describe: _____

9. Are you able to easily get trash to the carts and to the curb for pick up? ☐Yes ☐ No ☐ NA
   Describe: _____

10. Are you able to easily get trash carts to the curb? ☐Yes ☐ No
    Describe: _____

11. Do you have garage (or storage shed)? ☐Yes ☐ No
    Is it easy or hard to access? Describe _____

Inside The House-General

Observations:

1. Are pathways free of obstacles/clutter? ☐Yes ☐ No

2. Is there loose/frayed carpet? ☐Yes ☐ No Where is it located? _____

3. Number of lights in the house:
   Adequate: ☐Yes ☐ No Describe: _____

4. Measure the width of hallways: _____
   Are the hallways wheelchair-accessible? ☐Yes ☐ No

5. How many stairs are inside the home? Number upstairs: ___ Number downstairs: ___
   Measure height of stairs: Stair Height Up: _____ Stair Height Down: _____

6. Type/Location of handrails: ☐ Single (one side) ☐ Double (both sides)
   Secure: ☐Yes ☐ No
   Good Condition: ☐Yes ☐ No
   Measure height of handrails: _____

7. Is there non-slip material on the stairs? ☐Yes ☐ No Type: _____
   Condition of non-slip material: ☐ Good ☐ Moderate ☐ Bad ☐ Other (specify) _____

8. Is there a light switch at the top of the staircase? ☐Yes ☐ No
   Is the light adequate? ☐Yes ☐ No

   Is there a light switch at the bottom of the staircase? ☐Yes ☐ No
   Is the light adequate? ☐Yes ☐ No

9. Measure door knob height: _____

10. Type of door knob: ☐ Lever ☐ Round ☐ Thumb-push ☐ Other (specify) _____

11. Measure height of light switches: _____ Type of light switches: _____

Specific Questions:

1. Do you use throw rugs? ☐Yes ☐ No
   Placement/Condition: _____
   _____

2. Can you easily read your emergency phone numbers? ☐Yes ☐ No
   If not, describe why: _____

   Location of emergency numbers: _____

3. Can you read and dial your telephone easily? ☐Yes ☐ No
   If not, describe why: _____

   Number of Portable Phones: _____
   Location of phones _____

4. Do you have difficulty turning light switches on or off? ☐Yes ☐ No
   If so, describe why: _____

5. Do you have difficulty opening or closing doors in the house? ☐Yes ☐ No
   If so, describe why: _____
   Which way do the doors open: _____

6. Do you keep any lights on at night? ☐Yes ☐ No
   Location: _____

7. Do you have nightlights? ☐Yes ☐ No
   Location of nightlights: _____
   Is the light adequate? ☐Yes ☐ No

8. Do you ever hold onto furniture or the walls while you walk around your home? Yes/No
   If so, describe: _____

7. Do you ever trip inside your home? ☐Yes ☐ No
   If so, what causes you to trip/fall? _____
   How often do you trip or fall inside or outside or home? _____
   Location of tripping/falls: _____
   In what rooms are you most concerned about falling? _____

Living Room/Dining Room

Observations:

1. Height of window sills: _____

2. Observe any walking path obstructions:_____

3. Observe general lighting/adequacy:_____

4. Height of light switches: _____

Specific Questions:

1. Do you have any difficulty getting into and out of a sofa, or chair? ☐Yes ☐ No

2. Do you have a favorite chair? ☐Yes ☐ No

   How often do you have trouble sitting down in it or standing up out of it?
   _____

3. Do you have a remote control for your T.V.? ☐Yes ☐ No Type of remote: _____
   Can you read the buttons on the remote control? _____

4. Can you easily reach window blinds/shades/draw cord? ☐Yes ☐ No

5. Can you change/open shades: ☐Yes ☐ No Describe: _____

Kitchen

Observations:

1. Type of cabinets: _____
2. Height of cabinets: _____
3. Type of drawer/cabinet pulls: _____
   Prompt for assessors: observe homeowner(s) opening/closing cabinets and using faucets
4. Type of faucet handles: _____
5. Height of controls on the stove and microwave: _____
6. Location of controls on the stove and microwave: _____
7. Height of freezer: _____
8. Is there a seating area in the kitchen: ☐Yes ☐ No Table in kitchen: ☐Yes ☐ No
9. Observe general lighting locations/adequacy: _____

Specific Questions:

1. Can you easily reach/use cupboards or storage space? ☐Yes ☐ No Describe:_____
2. Do you use a step stool: ☐Yes ☐ No
3. Do you feel safe using the stepstool: ☐Yes ☐ No If no, describe why: _____
   Prompt for assessors: observe homeowner(s) using the stepstool
4. Do you have difficulty lifting/transporting items during meal preparation? ☐Yes ☐ No
   If yes, describe why: _____
5. Can you easily open/close drawers/cabinets? ☐Yes ☐ No
   If no, describe why: _____
6. Do you have any difficulty working at the sink/counter or using the faucets? ☐Yes ☐ No
   If yes, describe why: _____
7. Do you have any difficulty using the stove/microwave? ☐Yes ☐ No
   If yes, describe why: _____
8. Are you able to easily read the microwave buttons? ☐Yes ☐ No
9. Can you easily open/close, and get items in the refrigerator? ☐Yes ☐ No

10. Can you easily reach into the freezer to get out items? ☐Yes ☐ No

11. Do you get tired easily while making meals? ☐Yes ☐ No
    If yes, describe why: _____

12. Do you have a fire extinguisher/baking soda in case of a stove fire? ☐Yes ☐ No

Bedroom #1

Observations:

1. Door entrance width: _____

2. Light switch location: _____
   Can they reach the light switch from bed? ☐Yes ☐ No

3. Telephone location: _____
   Can they reach the light switch from bed? ☐Yes ☐ No

4. Type of drawer pulls? _____

Specific Questions:

1. Can you easily get into and out of the bed? ☐Yes ☐ No
   If no, describe why: _____

2. Can you easily move around the bedroom? ☐Yes ☐ No
   If no, describe why: _____

3. Can you easily open closet doors, reach clothing, coats, shoes/other closet items? ☐Yes ☐ No
   If not, describe why: _____

4. Can you easily reach, open and close all dresser drawers? ☐Yes ☐ No
   If no, describe why: _____

Bedroom #2 (if used)

Observations:

1. Door entrance width: _____

2. Light switch location: _____
   Can they reach the light switch from bed? ☐Yes ☐ No

3. Telephone location: _____

Can they reach the light switch from bed? ☐Yes ☐ No

4. Type of drawer pulls? _____

Specific Questions:

1. Can you easily get into and out of the bed? ☐Yes ☐ No
   If no, describe why: _____

2. Can you easily move around the bedroom? ☐Yes ☐ No
   If no, describe why: _____

3. Can you easily open closet doors, reach clothing, coats, shoes/other closet items? ☐Yes ☐ No
   If not, describe why: _____

4. Can you easily reach, open and close all dresser drawers? ☐Yes ☐ No
   If no, describe why: _____

Bathroom

Observations:

1. Type of faucet handles: _____

2. Type of shower handles: _____

3. Measure Height of sink: _____

4. Measure Height of faucet: _____

5. Measure Height of medicine cabinet: _____

6. Measure Height of toilet seat: _____

7. Is toilet seat raised? ☐Yes ☐ No

8. Are there Grab bars? ☐Yes ☐ No Location of grab bars: _____

9. Measure tub edge height: _____

10. Is there a non-slip tub floor or mat? ☐Yes ☐ No

11. General Lighting/Locations/Adequacy: _____

12. Measure Door width: _____

Specific Questions:

1. Do you have any difficulty using the sink or the faucets? ☐Yes ☐ No
   If yes, describe why: _____

2. Do you have any difficulty using or storing personal care items near the sink/tub/shower? ☐Yes ☐ No
   If yes, describe why: _____

3. Do you have any difficulty storing or removing items from the closet shelves: ☐Yes ☐ No
   If yes, describe why: _____

4. Do you have difficulty stepping into/out of the bath/shower? ☐Yes ☐ No
   If yes, describe why: _____

5. Do you have any difficulty using the tub faucets, shower control, or drain plug? ☐Yes ☐ No
   If yes, describe why: _____
   Do they work? _____

6. Do you have any difficulty taking a bath or a shower? ☐Yes ☐ No
   If yes, describe why: _____

7. Do you have any difficulty getting on/off the toilet? ☐Yes ☐ No
   If yes, describe: _____

8. Do you have any difficulty reaching the toilet paper? ☐Yes ☐ No
   If yes, describe: _____

9. Do you ever get tired standing at the sink? ☐Yes ☐ No
   If yes, describe: _____
   If yes, do you ever use a stool or seat? ☐Yes ☐ No

Basement/Laundry Room

Observations:

1. Location of washer and dryer: _____

2. Height of washer/dryer controls: _____

3. Location of washer/dryer controls: _____

4. Adequate contrast, size, and readability of washer/dryer controls: ☐Yes ☐ No

5. Type of washer/dryer: ☐ Front Load ☐ Top Load ☐ Other (specify) _____

6. Number of hand rails: _____

7. Location of hand rails: _____

8. Measure Stair Height: _____

9. Number of stairs: _____

10. Non-slip material on stairs: ☐Yes ☐ No Contrast on stair treads: ☐Yes ☐ No

11. Is the area free of clutter? ☐Yes ☐ No

    If not, describe what: _____

12. Measure Height of storage cabinets: _____

13. Type of Lighting: _____
    Is there a light at top of stairs? ☐Yes ☐ No
    Is there a light at the base of the stairs? ☐Yes ☐ No

Specific Questions:

1. How do you transport your laundry to and from the washer? _____

2. How do you transport your laundry to and from the dryer? _____

3. Do you have any difficulty using or seeing the dials on the washer/dryer? ☐Yes ☐ No
   If yes, describe: _____

4. Do you use basement for storage? ☐Yes ☐ No
   If so, what do you store there? _____

Garage/Storage Shed

Observations:

1. Is there an entrance on the side of the building? ☐Yes ☐ No
   If yes, what type of lock: ☐ Single Cylinder ☐ Double Cylinder ☐ Other (specify) _____

2. Type of garage door: ☐ Automatic ☐ Manual ☐ Other (specify) _____

3. Location of lights: _____ Is the lighting adequate? ☐Yes ☐ No

4. Type of lights: ☐ Motion detected ☐ Manual/Switch ☐ Other (specify) _____

5. Is there a clear pathway to the building? ☐Yes ☐ No

   If no, describe: _____

Specific Questions:

1. Do you have an automatic door opener? ☐Yes ☐ No

2. What do you use this unit for? _____

3. Do you have any difficulty using accessing the garage or storage unit? ☐Yes ☐ No
   If yes, describe: _____

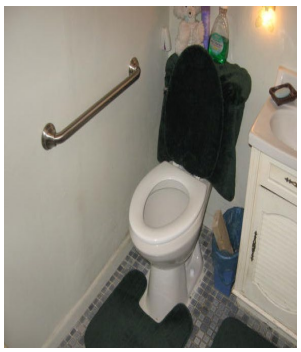
Appendix D

SHARP Photographs

SHARP Team Photo at Retreat March 12th, 2008

Pre and Post SHARP Photos

Pre-modification:
No grab bar to assist with transfers



Post-modification
Grab bar installed to assist with transfers

Pre-modification:
Round handles on faucet

Post-modification
Lever handle installed for easier use

Pre-modification:
Only 1 handrail on stairwell

Post-modification
Double handrails on stairwell

Appendix E

Equivalent Text Descriptions for Appendix D Images

Image 1: SHARP Team Photo at Retreat March 12th, 2008

Brief Description: photograph of the Senior Home Assessment and Repair Program (SHARP) team at their retreat

Essential Description: The photograph displays the twelve SHARP team members grouped together. The image displays a sense of unity and team collaboration between the multiple disciplines within the group. The team members photographed are all smiling, conveying that they have a sense of agreement and harmony between each other. Although the members of the team in the photograph are not labeled with their title and the organization they are from, team members from different organizations are some what spread out throughout the photograph to demonstrate interdisciplinary relationships.

Detailed Description: In the photograph, the twelve team members are lined up left to right with shorter individuals stationed in the front row and taller individuals in the back row. In the front row from left to right are Rochelle, Kristi, Barbara, Carleen, Crystal, and Charlotte. In the back row from left to right are Eric, Scott, Chris, Randy, Lynea, and Roger. The team members from the various organizations and disciplines are scattered throughout the two rows. All of the members are wearing professional attire, such as sweaters and button-up shirts, and smiling while facing towards the camera. In the center of the photograph behind the team members is a green banner with both words and images on it but has no relation to the SHARP project.

Image 2: Pre-modification: No grab bar to assist with transfers

Brief Description: photograph of elderly female homeowner seated on toilet without grab bar to assist with transfers

Essential Description: This photograph depicts the potential difficulties of an elderly homeowner with various impairments who is trying to rise from the toilet. It is an example photograph of a pre-modification and the homeowner is not actually using the toilet and needing assistance to transfer. The female homeowner is seated on the toilet and is holding her arm out near the wall where a grab bar would be installed. In this case there is no grab bar currently installed which displays the limited ability for assistance with transferring. Therefore, the homeowner is conveying the message that she has limited assistance with transfers without a grab bar in place.

Detailed Description: In the photograph, there is a white wall on the left side of the image and a toilet seat directly in the center. The elderly homeowner is seated on the toilet and is wearing a grey sweatshirt, grey sweatpants, and a yellow turtleneck which is visible around her neck and wrists. The homeowner is also wearing glasses. She is seated upright on the toilet seat but her neck is turned so she is facing the wall on the left side of the image. The homeowner also has her right arm stretched out to imitate how she would hold a grab bar, but there is no grab bar present in this image. On the back of the toilet is the ledge that is covered by a dark-colored towel with two canned items on it that appear to be air sanitizer. On the right side of the image, you can see the corner of the sink vanity which is white and rectangular.

Image 3: Post-Modification: Grab bar installed to assist with transfers

Brief Description: photograph of toilet with horizontal grab bar installed on wall adjacent to toilet

Essential Description: This photograph shows the addition of a grab bar to assist individuals with various impairments or disabilities to rise from the toilet. On the wall adjacent to the toilet is a grab bar installed to provide assistance with transfers from the toilet as well as to provide support to the individual when rising from the toilet. The installation of the grab bar on the wall adjacent to the toilet instills increased safety, support, and decreases the potential for falls.

Detailed Description: In the photograph, there is a white wall on the left side of the image and a toilet seat directly in the center of the image. On the left side of the image, a silver, horizontal grab bar is anchored to the wall adjacent to the toilet. On the back of the toilet is the ledge that is covered by a dark-colored towel with two canned items on it that appear to be air sanitizer and a bottle of cleaning solution. On the right side of the image, you can see half of the sink vanity which is white and rectangular with a soap dish and soap on the left corner of the vanity and black door handles. On the bottom of the image is the bathroom floor, which has a dark-colored rug around the toilet, a wastebasket between the toilet and sink vanity, and a dark-colored rug in front of the sink vanity. The uncovered portion of the flooring consists of small tiles that are light blue, white, and dark blue in color.

Image 4: Pre-Modification: Round handles on faucet

Brief Description: photograph of sink and faucet with round handles

Essential Description: This photograph shows that a faucet with round handles that are not universally designed or accessible for reasons such as they are two separate, small awkward-shaped knobs that do not visually stand out from the rest of the faucet. There are currently round handles installed which decreases the use of proper body mechanics and the ease of use when turning on and off the water. Therefore, the image conveys the message that someone with limitations such as reduced strength and decreased motor control for example, may have difficulty managing the round faucet handles.

Detailed Description: In the photograph is a white sink with a silver faucet. The facet handles are round knobs. On the left side of the image is a soap dish with a blue bar of soap within the dish. On the right side of the image is a liquid soap dispenser that consists of a red fish to hold the soap and a white pump. There is also part of a light green towel hanging that is on the right upper corner of the image.

Image 5: Post-Modification: Lever handle installed for easier use

Brief Description: photograph of sink and faucet with lever handle installed

Essential Description: This photograph shows a faucet after the round knob handles have been replaced by a single lever faucet. On the back of the sink vanity, a lever

faucet handle has been installed. The installation of the new faucet facilitates the message that individuals with decreased joint mobility and limited strength, such as individuals with arthritis, may have a better experience using this type of faucet handle versus the round knob handles.

Detailed Description: This image is of a white sink that is taken from a slight angle rather than looking directly at the sink. On the lower left corner of the image is a soap dish that is holding a blue bar of soap. On the right upper corner of the image is a liquid soap dispenser that consists of a red fish to hold the soap and a white pump. In the center of the image is a silver faucet. This faucet has a lever handle that was installed to replace the previous round handles.

Image 6: Pre-Modification: Only 1 handrail on stairwell

Brief Description: photograph of five steps with one metal handrail on the left side of the image

Essential Description: In this photograph there are not handrails on both sides of the steps. Therefore, the photograph conveys the message that individuals will be limited when walking up and down the steps. The steps and handrail are not universally designed for a multitude of reasons such as lack of contrast on the steps and unsafe support for someone with impairments such as weak extremities. With this type of setup, there is also the issue that two individuals would not be able to use a handrail if they were walking in opposite directions, because one would not have the support of a rail. In this photograph it can also be assumed that it is cold outside because there is snow on the ground.

Detailed Description: The photograph displays five concrete steps looking from the top stair down. The metal handrail is on the left side of the image. The handrail is made from three different pieces of metal. The handrail is positioned in the grass right next to the steps. The metal handrail forms a square with the ground in which you can see through. The handrail is the color of rust and the corner joint pieces are silver. On one side of the steps there is grass with the handrail installed, which is located on the left, lower side of the image. On the other side of the steps and on the right upper side of the image there is a grey brick concrete half-wall. The wall is four bricks high and is filled with dirt that is covered in snow. At the bottom of the steps there is a small landing that turns into a sidewalk. On the other side of the sidewalk there is grass that is covered with patchy snow.

Image 7: Post-Modification: Double handrails on stairwell

Brief Description: photograph of five steps with two metal handrails

Essential Description: In this photograph there are handrails on both sides of the steps. This displays a more accessible and universally designed stairway for users. The concept of two handrails promotes additional support for going up and down the stairs as well as visual contrast of the rails against the background of the steps. The image also conveys the message that two individuals are able to use a handrail if they were

walking in opposite directions on the steps and would be provided additional support for safety reasons among others. The steps do not have visual contrast markers that still do not promote a universal design of the stairwell, but it is still more accessible than the post-modification image with only one handrail.

Detailed Description: The photograph displays five concrete steps looking from the bottom step up and was apparently taken during the day because it is light outside. There are two metal handrails on each side of the steps. The handrails span from the bottom of the first step up to the top of the fifth step. The handrails are made from three different pieces of metal. The handrail on the left is installed into the concrete steps. The handrail on the right is installed in the grass immediately next to the steps. The metal handrails form a square with the ground in which you can see through. The handrails are painted solid black. To the left of the concrete stairs on the left side of the image, there is a brick concrete wall that is brown in color. To the right of the stairs there is green grass with a few yellow patches of dead grass. At the top of the stairs there is a sidewalk that spans from left to right. On the other side of the sidewalk there are four potted plants lined up in a single file row. To the right to the potted plants there is a small rectangle garden. In this garden there approximately ten planted flowers and a bush. Also in the garden there is a pink flamingo on a metal stake. On the back side of the potted plants and garden there is a building. The building is made out of grey concrete bricks. On the left side of the structure there is a window that goes all the way down to the ground. The trim around the window is white. Inside of the window it is black.